

TYPE APPROVAL CERTIFICATE

Certificate no.:
TAA00003R4
Revision No:
3

This is to certify:

that the **Public Address and General Alarm System**

with type designation(s)
INTRON-X

issued to

INDUSTRONIC Industrie-Electronic GmbH & Co. KG
Wertheim, Germany

is found to comply with

DNV rules for classification – Offshore units
LSA Code VII 7.2

IMO A.1021(26) Code on alerts and indicators (2009)

IMO Res. A.694(17) General requirements for shipborne radio equipment forming part of the global maritime distress and safety system (GMDSS) and for electronic navigational aids

Application:

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.

Temperature	A*
Humidity	A
Vibration	A
EMC	B
Enclosure	A*

* unless specifically stated otherwise in Appendix

Issued at **Høvik** on **2026-03-27**

This Certificate is valid until **2030-11-17**.

DNV local unit: **Essen**

Approval Engineer: **Jostein Sund Jensen**



for **DNV**

This document has been digitally signed and will therefore not have handwritten signature

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to USD 300 000.

Product description

INTRON-X system can be provided as either:

- PA system only
- GA system only
- Integrated PA and GA system

For further product details and configurations, see Appendix.

INTRON-X Public Address and General Alarm System consisting of 1):

Central Cabinets modules					
Description	Module	Article no.	SW Version	variants of item	Variants of item name
Power supply system 230VAC input / 48VDC output	PMOD PS E48V 01/1	325-220-001		309-799-500	PSE-230/48/37
				309-799-501	PSE-230/48/74
				309-799-502	PSE-230/48/112
				309-799-503	PSE-120/48/23
				309-799-504	PSE-120/48/46
				309-799-505	PSE-120/48/69
				325-220-001	PMOD PS E48V 01/1
				325-220-002	PMOD PS E48V 01/2
				325-220-003	PMOD PS E48V 01/3
				309-114-100	PSE/F
Change-over switch with mains monitoring	3,6 NUS 230/2	309-640-200		309-640-100	3,6 NUS 230
				309-640-200	3,6 NUS 230/2
				309-640-300	1,9 NUS 120/2
				309-640-400	3,6 ATS 230
				309-640-500	7,2 ATS 230
Networkable public address unit 600 Watt	600 NPA 132	302-145-400	4.2.x	325-310-001	PMOD IP-PA 300W 01
				325-310-002	PMOD IP-PA 300W 01/BA
				325-310-003	PMOD IP-PA 600W 01
				325-310-004	PMOD IP-PA 600W 01/BA
				325-310-005	PMOD IP-PA 600W 01/2
				325-310-006	PMOD IP-PA 600W 01/2/BA
				325-310-007	PMOD IP-PA 600W 21
				325-310-008	PMOD IP-PA 600W 21/BA
				325-310-009	PMOD IP-PA 600W 21/2
				325-310-010	PMOD IP-PA 600W 21/2/BA
				302-143-500	600 NPA 140
				302-144-100	300 NPA 111
				302-144-200	300 NPA 121
				302-144-300	600 NPA 121
				302-144-400	600 NPA 131
				302-144-500	600 NPA 141
				302-145-100	300 NPA 112

Central Cabinets modules					
Description	Module	Article no.	SW Version	variants of item	Variants of item name
				302-145-200	300 NPA 122
				302-145-300	600 NPA 122
				302-145-400	600 NPA 132
				302-145-500	600 NPA 142
Telephone interface	Telephone-Gateway IP311 4x FXO / 2 x FXS	342-503-508		342-503-507	Telephone-Gateway IP 811 4x S0
				342-503-508	Telephone-Gateway IP311 4x FXO / 2 x FXS
				342-503-510	IP3011 - 4E120
				342-503-520	IP6010 - 4E120
1 MTU 01 Entertainment		315-035-100			
Managed industrial switch, max. 28 ports	Modular managed PoE+ FE Switch 19", DC	070-028-040		070-028-040	Modular managed PoE+ FE Switch 19", DC
				070-028-044	Modular managed PoE+ FE Switch 19", DC DC
				070-028-045	Modular managed FE Switch 19", AC
				070-028-046	Modular managed FE Switch 19", AC AC
				070-028-047	Managed GE Switch 19", AC AC
				070-028-048	Modular managed FE Switch 19", DC
				070-028-049	Modular managed FE Switch 19", DC DC
				070-028-404	24-Port managed GE Switch 19"
				070-028-405	28-Port managed GE SFP Switch 19"
				070-028-406	24-Port managed GE PoE+ Switch 19"
				070-028-037	10-Port unmanaged FE Switch DIN Rail
				070-028-070	10-Port managed FE PoE+ Switch DIN Rail
				070-028-077	6-Port managed FE PoE+ Switch DIN Rail
				070-028-400	8-Port unmanaged GE PoE++ Switch DIN Rail
				070-028-402	7-Port managed GE PoE++ Switch DIN Rail
				070-028-403	12-Port managed GE PoE+ Switch DIN Rail
				070-028-407	10-Port managed GE PoE++ Switch DIN Rail
				070-028-408	20-Port managed GE PoE+ Switch DIN Rail

Add-on module for industrial switch 8x 10/100 BaseT(X); RJ-45 PoE according to 802.3af/at	8-Port FE PoE+ Modul	070-028-041		070-028-041	8-Port FE PoE+ Modul
				070-028-042	8-Port SFP Modul
				070-028-043	8-Port FE Modul
X-Controller plug-in device for controlling components connected to the INTRON-X system	1 XCO 001/1	344-001-100	10.5.x	326-001-001	PMOD 1 XCO 001/1
				326-001-002	PMOD 1 XCO 001/2
				344-001-100	1 XCO 001
Digital Gateway for connection of 2 digital INDUSTRIAL terminal devices	8 XDG 001/2	344-010-100	1.4.x	326-010-001	PMOD 8 XDG 001/1
				326-010-002	PMOD 8 XDG 001/2
				344-010-100	8 XDG 001
Beacon control plug-in device for controlling 4 flashing warning beacon circuits	4 XBC 001/1	344-030-100	4.3.x	326-030-001	PMOD 4 XBC 001/1
				344-030-100	4 XBC 001
Analog Line plug-in device for connection of 6 audio interfaces	6 XAL 001/2	344-021-100	4.2.x	326-021-001	PMOD 6 XAL 001/1
				326-021-002	PMOD 6 XAL 001/2
				344-021-100	6 XAL 001
I/O plug-in device with 24 control inputs/outputs	24 XIO 001/1	344-020-100	4.2.x	326-020-001	PMOD 24 XIO 001/1
				344-020-100	24 XIO 001
Power supply plug-in device with input voltage 90 ... 264 V AC, output voltage 48 V DC ... 55 V DC, output power 500 W	10 XPS 48	344-040-100		326-040-001	PMOD 500W XPS 48V/1
				326-040-002	PMOD 500W XPS 48V/2
				344-040-100	10 XPS 48
IP service intercom station	32 NSR 001/GM/C8	302-059-200/GM/C8	4.2.x	302-059-200/GM/C8	32 NSR 001/GM/C8
				302-059-300	32 NSR 002/GM/C8
IP-Touch intercom station for 19" system	10 NER 001	351-700-100	1.7.x		
Cabinet illumination set LED	1 SBS 03/DE	218-825-000		218-825-000	1 SBS 03/DE
				218-825-100	1 SBS 03/GB
				218-825-200	1 SBS 03/US

Digital Gateway for connection of 2 digital INDUSTRIAL terminal devices with redundant Fast Ethernet Interface 100Base-TX (electrical)	2 XDG 001	344-011-100	1.4.x	344-011-100	2 XDG 001
				344-011-200	2 XDG 011
IP interface for analog systems with 4-wire AF interface, 11 potential-free inputs and 11 potential-free outputs	11/11 NSG 001	302-056-100	4.2.x	302-056-000	03/03 NSG 001
				302-056-000/B	03/03 NSG 001/B
				302-056-100	11/11 NSG 001
				302-056-200	19/19 NSG 001
				302-056-300	27/27 NSG 001

Equipment type	Description	Module	Article no.	SW	Location
PAGA Network-based call stations	Access Panel, Desktop intercom station with 7" color touch display, 36 mechanical keys with integrated signaling function, 3 function keys, handset, cover for 8 mechanical keys and redundant network interface	xx AP 712 ²⁾	302-053-600/C8	4.3.x	As described under application page 1
PA (GA) Intercom Equipment	Digital outdoor intercom station incl. dial keypad with 12 keys, 2 momentary rocker switches, signaling, booster amplifier 25 W	x DAE 715/25 ²⁾	301-642-401/25	55.0.x	Enclosure: Class C (Open deck, masts, below floor plates in engine room) Temp: Class D (–25°C to 55°C)
	Digital explosion-proof intercom station incl. dial keypad with 12 keys, 2 momentary rocker switches, signaling, 25W booster amplifier	x DXE 715/25 ²⁾	301-651-401/25	52.0.x	
	Digital desktop intercom station with 15 membrane keys, cover for 6 keys, display,	xx DTM 010 ²⁾	301-471-100/C6	31	As described under application page 1
	Digital desktop intercom station, modular design, with 16 membrane keys, signaling and cover for 4 keys	xx DT 705 ²⁾	301-615-100/C4	55.0.x	
Intercom Equipment	IP desktop intercom station, Basic with 12 direct keys with integrated signaling function, dial keypad, 4 function keys, network interface	12 NIB 001	302-055-100	4.2.x	As described under application page 1
Interface Units	Digital Dual System interface for connection of one digital intercom unit to two INTRON-D plus or INTRON-X systems as a redundant system, in an aluminium Ex-proof housing	2 DDSIX 103	301-439-600	4	Enclosure: Class C (Open deck, masts, below floor plates in engine room) Temp: Class D (–25°C to 55°C)

Equipment type	Description	Module	Article no.	SW	Location
	Digital Dual System interface for connection of one digital intercom unit to two exchange systems as a redundant system	2 DDSI 103	301-439-400	4	As described under application page 1

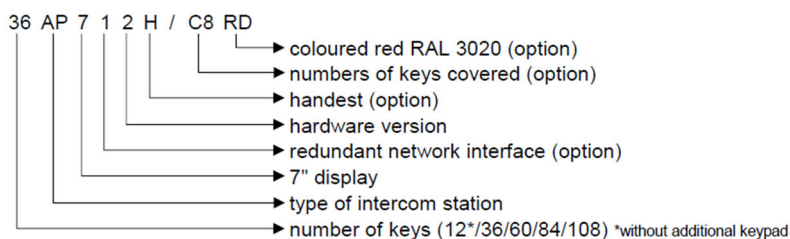
¹⁾ Actual configuration may vary based on requirements for individual installations. Only modules listed in certificate are approved for installation.

²⁾ See below for description of numbering and available options. Model listed in certificate is considered representative for all options.

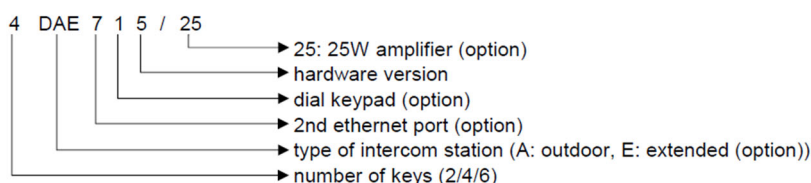
Intercom equipment

Number code

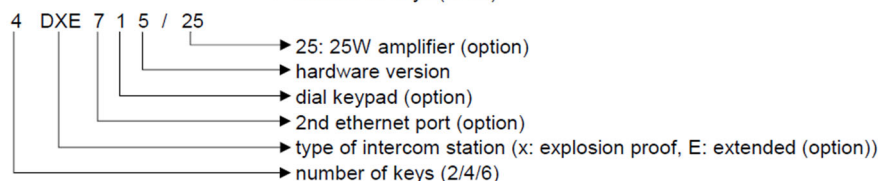
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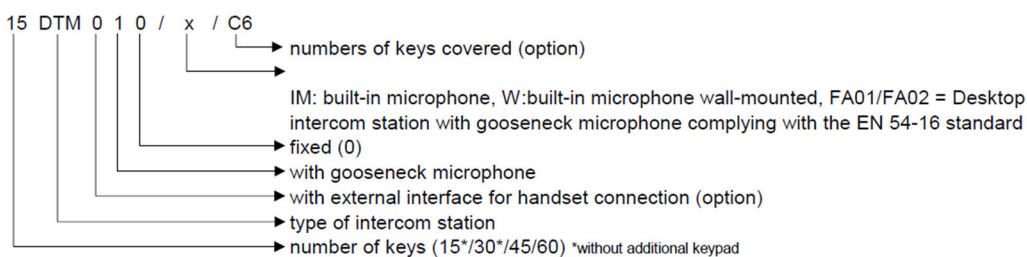
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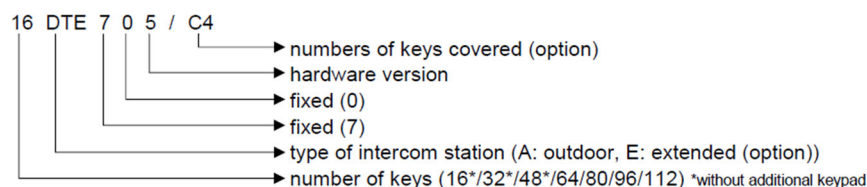
DXE



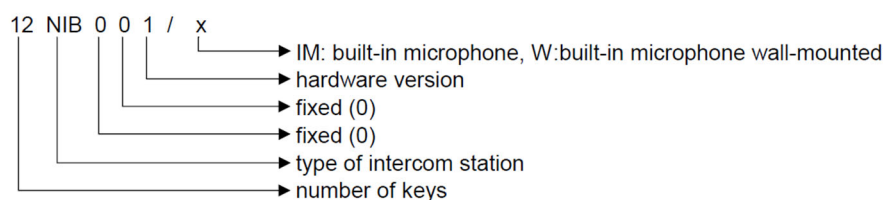
DTM



DTE



NIB



Application/Limitation

1. The certificate is only valid for installations on non-EU/EEA/UK flag offshore units.
2. The INTRON-X Public Address and General Alarm system shall operate on a dedicated IP network/LAN, consisting of components listed in this certificate. Interconnection to other networks is subject to separate case-by-case approval.
3. Power supply filter LGF-Filter FFU 1x12B-SB 02 shall be used for compliance with IEC 60945 9.2
4. Any PA functions which are not used for activation of emergency PA shall have a lower priority than GA.
5. When used as combined PA/GA system, minimum two independent speaker loops are required.
6. Access panels xx AP 712, when installed on the bridge and featuring more than 12 keys, shall be equipped with an external light source that allows for adjustable brightness.

Type Approval documentation

Doc. No.	Rev.	Title
DE23US94 001	2024-05-02	Report: TÜV Rheinland, IEC 60945 EMC test report for INTRON-X System
DE23X7QG 001	2023-06-27	Report: TÜV Rheinland, Salt mist tests for DA/ DAE/ DX/ DXE/ NRO/ DDSI and DDSIX outdoor call stations
DE24LADF 002	2024-04-05	Report: TÜV Rheinland, IEC 60945 temperature test report for INTRON-X System
DE24SOKP-001	2024-04-12	Report: TÜV Rheinland, DNV-CG-0339 (2021) vibration test report for INTRON-X System
DE23W1EC-001	2024-04-12	Report: TÜV Rheinland, IEC 60945 vibration test report for INTRON-X System
HWM-513-040-40	2023-06-07	Manual: Industrionic, Hardware Manual for Intron-X
TIP-301-650-000	V01	Report: VDE, IP66 test report for Ex and Outdoor Intercom Stations
TIP-302-071-000	V01	Report: VDE, IP66 test report for IP Outdoor Intercom Stations
TIP-301-465-000	V04	Report: VDE, IP 66 test report for DA, DAE, DX, DXE, DAZ and DAX Intercom stations
BS 1009-00/23	2023-02-10	Report: TÜV Rheinland, DIN EN 54-16 Software test report for INTRON-X System
FDE-513-040-400	V05, 2025-11-04	Manual: Industrionic, System Description for Intron-X
PS/18E/15.07.2022	2022-07-15	REPORT: CNBOP-PI, EN 54-16 No. 641/BA/23, SNR and Frequency response, INTRON-X/FA NPA 150W and 300W

Tests carried out

- Environmental testing: DNV-CG-0339 (2021)
- Performance testing: Functional tests according to DNV Type Approval programs 848.22 for PA/GA systems,

Marking of product

The Manufacturer and Type Designation to be applied to the equipment in a clearly visible location. In addition the equipment shall be marked with the Type Approval certificate number, serial number, safe distance to magnetic compass, power consumption and/or supply voltage.

Periodical assessment

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

The scope of the periodical/renewal assessment is to verify that the production quality conditions stipulated for the type approval are complied with and that no alterations are made to the product design or its components and/or materials without appraisal by the Society.

Manufactured by:

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